FY01-03 O&M,N Initiative Submission

Improved Temper Etch Inspection

ID: 01-4-430-003

Code 4.3.4

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Initiative Overview

- **Description**
  - Current Temper Etch process requires baking for hydrogen embrittlement relief (all high strength steels)
  - Baking adds time to the overhaul process and cost money
  - Improved temper etch inspection process eliminates the baking requirement
- **Equipment/Process Impacted**
  - Temper etch inspection process is used at all Depots (over 2000 parts/year at JAX alone)
  - Temper etch inspection is used after grinding all high strength steels (i.e.landing gear components) at Depot overhaul
  - This initiative will decrease equipment used in the temper etch process (eliminates equipment vice adding new equipment)
- **Additional Benefits for implementing Initiative**
  - Reduction in usage of hazardous materials (HCl, Sodium Hydroxide)
  - Reduction in water used
  - Reduced tank maintenance and testing, reduced oven usage and maintenance
  - Reduced component processing time

Cost

Cost Summary

- **First Year of Investment:** FY01 **1st Year Investment Cost:** $150K
  1st Year O&M,N Requested: $150K
- **Total Investment Cost:** $150K **Appropriation Type(s):**
- **Total Avoidance:** $1,113.6K **ROI:** 6.33:1 **Break Even Date:** 1st qtr 03
- **Can init still be performed as described if no investment dollars available until FY02?** Yes
- **Can init still be performed as described if no investment dollars available until FY03?** Yes
- Program's Cost Avoidance Confidence (1 to 10): 10
- Extremely conservative cost calculations used in the initiative.
- The new temper etch procedure is already being used by some inducstries
- Initial technical review indicates a high probability of success

Schedule and Technical Performance

- **Schedule Summary**

All testing and analysis necessary for completion of this initiative will be conducted within the first year of funding

Program's Schedule Confidence (1 to 10): 10

- **This is a relatively simple task and well within the capability of the Materials Engineering Laboratories at Jacksonville, Cherry Point, Pax, and North Island**

- **Technical Confidence**
  - **Program's Technical Confidence (1 to 10): 10**
  - **There are no technical risks associated with this initiative**
  - **Initial technical review of existing data indicates a very high probability of success**

  - **How Will you Track Results: This initiative has no requirements for tracking fielded components**
  - **Energy savings and other benefits can be tracked for each of the Depots**

Risk & Mitigation

Technical Risk

- Low
- This initiative will not affect fielded components unless proven successful
- The only risk is loss of the investment cost should the study conclude the technology is not successful

Schedule/Implement Risk

- Low
- Execution of this initiative will not affect any component rework schedules
- Simply, straightforward test plan
- Execution is well within the capability of the Materials Engineering Competency

Other Risk Factors

- There are no other risk associated with this initiative